DG-1145: Combined License Applications for Nuclear Power Plants (LWR Edition)

Office of Nuclear Reactor Regulation
June 14, 2006

Section C.I.15, Transient and Accident Analyses

- Section rationale and technical basis
- Referencing a certified design as a COL applicant
- Pre-Workshop Comments
- Q&A

U.S. Nuclear Regulatory Commission
Division of New Reactor Licensing

Section C.I.15

- Rationale:
  - Provide guidance for 10 CFR Part 52 applicants
- Technical basis:
  - Regulatory Guide 1.70, Rev. 3, Nov. 1978
  - ABWR, System 80+, AP1000/600, (ESBWR) Reviews
  - Standard Review Plan

Referencing a Certified Design

In the case of a COL application referencing a certified design, what additional information do the applicants need to provide?

Referencing a Certified Design

Reactor System Branches (PWR and BWR) and Nuclear Performance and Code Review Branch

- Identify design differences from the certified design, including fuel types, design parameter values, and operating conditions.
  - Confirm the design difference is bounded by the transient and accident analyses in the design certification document (DCD). If not bounded, provide the analysis.

Referencing a Certified Design

Reactor System (PWR and BWR) and Nuclear Performance and Code Review Branches

- Address all COL Action items related to transient and accident analyses in the DCD
  - Fuel design dependent transients may require analyses
  - Limiting transients may require additional analyses

Referencing a Certified Design

Accident Dose Branch

(1) Show your site-specific X/Qs are within the X/Qs assumed in the DCD plant parameter envelope.

(2) Address any COL action items in the DCD Chapter 15 (could be different for each design).

Pre-workshop Question/Comment No. 1

Section 15.0, first paragraph

This section refers to policies and procedures that may not be available at the time the COLA is submitted. The balance of the Chapter 15 guidance does not refer to any policies or procedures. What policies and procedures are these?

Pre-workshop
Public Comments and Questions

Staff Response:

We will remove this introductory paragraph because it is not clear.

Pre-workshop
Question/Comment No. 2

Section 15.0, 4th paragraph.

This section lists a number of TMI Action Plan items that must be addressed. Some of these were not addressed in generic DCDs even though the subject matter is in the generic DCD scope. We understand that a COL application referencing a certified design would not be required to address the generic design issues in this list since the DCD information was determined to be adequate for that scope during the design certification process. This comment also applies to the information on Generic Safety Issues and operating experience insights.

Pre-workshop
Public Comments and Questions

Staff Response:

Depending on the type of reactor, some TMI action items, Generic Safety Issues, and operating experience insights might not have been addressed in the DCD. It is incumbent on the applicant to verify that those items are addressed. If not, the applicant may be required to provide additional information.

Pre-workshop
Question/Comment No. 3

Section 15.1, 1st sentence.

It appears that a word(s) is missing in the first line.

Staff Response: editorial (delete "in")

Organize the transients and accidents and present the results (in) that will:

Pre-workshop Question/Comment No. 4

Concerning Section 15.6.2, Item f

15.6.2 Sequence of Events and Systems Operation

Discuss for each initiating event:

f. Discuss the basis in the Emergency Operating Procedures (EOP) for operator response, available instrumentation, and timing.

Specific Comment/Question:

Typical Chapter 15 analyses include any credited operator actions in the sequence of events following an accident or transient. The basis for assumed action times and available instrumentation were described in the basis documentation for the EOPs. It is not clear what level of detail is requested here for inclusion in Chapter 15.

Pre-workshop Public Comments and Questions

Staff's Response:

The same level of detail in the analyses should be provided as in the basis documentation for the EOPs. Ensure consistency between the operator response, available instrumentation, and timing to what is described in the EOPs.

Explain any differences.

Section C.I.15
Public Comments and Questions

Further questions/comments regarding

Chapter C.I.15?

Section C.I.1, Introduction and General Description of Plant

- Section C.I.1 provides guidance for a COL applicant that does not reference a certified design and early site permit
- Section C.III.1 provides guidance for a COL applicant that references a certified design
- Section C.III.2 provides guidance for a COL applicant that references a certified design and an early site permit

Section C.I.1

- 1.1 Introduction
  - plant location
  - containment type
  - reactor type
  - power output
  - schedule
  - format and content

Section C.I.1

- 1.2 General Plant Description
- 1.3 Comparisons with other facilities
- 1.4 Identification of Agents and Contractors
- 1.5 Requirements for Further Technical Information
- 1.6 Material Referenced
- 1.7 Drawings and Other Detailed Information
- 1.8 Interfaces (with Standard Designs and Early Site Permits)

Section C.I.1

- 1.9 Compliance with Regulatory Criteria
  - 1.9.1 Regulatory Guides
  - 1.9.2 Standard Review Plan
  - 1.9.3 Generic Issues
  - 1.9.4 Operational Experience
  - 1.9.5 Advanced and Evolutionary Light Water Reactor Design Issues

Section C.I.1- Public Comments and Questions

- 9 questions/comments received on Section C.I.1 prior to workshop
- Additional questions received during March 2006 workshop
- Proposed responses for 9 questions/ comments received on Section C.I.1
- Additional responses to be provided later